



DEPARTMENT OF THE NAVY
COMMANDER, NAVY INSTALLATIONS COMMAND
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WASHINGTON NAVY YARD, DC 20374-5140

CNICINST 5104.1
N3

CNIC INSTRUCTION 5104.1

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From: Commander, Navy Installations Command

Subj: Inventory Control Program for Non-Exempt Radiation Sources

Ref: (a) DoDI 6055.08, Occupational Ionizing Radiation
Protection Program, 15 Dec 2009
(b) DoDI 6055.11, Protecting Personnel from
Electromagnetic Fields, 19 Aug 2009
(c) NAVSEA S0420-AA-RAD-010, Radiological Affairs Support
Program Manual
(d) SECNAVINST 5100.14 (series)
(e) OPNAVINST 5100.27 (series)
(f) NAVSEA OP 3565/NAVAIR 16-1-529 Volume 1,
Electromagnetic Radiation Hazards to Personnel, Fuel,
and Other Flammable Material
(g) 10 CFR, U.S. Nuclear Regulatory Commission Regulations

Encl: (1) Glossary of Terms
(2) Information and Selected Examples of Components,
Devices, Equipment and Commodities for Inventory
(3) Technical Points of Contact

1. Purpose. To establish policy guidance for implementing a comprehensive inventory control program for non-exempt radioactive materials, radiation-producing machines, and non-ionizing radio frequency sources at Navy Regions and Installations.

2. Background. The inventory control program serves as Commander Navy Installations Command's (CNIC) principal method of tracking and monitoring non-exempt radiation sources to minimize the risk of harmful radiation exposure and injury to personnel and the general public, and to prevent radioactive material contamination of personnel equipment and facilities. Use or storage of damaged radioactive commodities and improper disposal can cause mild radioactive contamination of the immediate vicinity, requiring a potentially expensive clean up.

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3. Discussion. References (a) through (g) require inventory control of commodities and equipment containing radioactive materials and radiation-producing machines/equipment. Ionizing inventory exemptions are found in references (c) and (g). Non-ionizing inventory exemptions are found in references (d), (e) and (f).

4. Objectives

a. To maintain control and accountability from acquisition to disposal of all radioactive commodities and radiation-producing machines/equipment owned or held in physical custody by CNIC under a Nuclear Regulatory Commission (NRC) license or Service Authorization Permit.

b. To protect personnel and prevent environmental contamination through strict compliance by Region Commanders and Commanding Officers of installations with this instruction and all other related and applicable federal, state, local laws and regulations pertaining to inventory tracking and monitoring of non-exempt radiation sources.

5. Scope and Applicability. This instruction applies to all CNIC installations procuring, possessing or using licensed or permitted sources of radiation. For the purpose of this instruction, non-exempt radiation sources are defined as radioactive materials in commodities and equipment or radiation-producing equipment. It does not apply to the use of any fixed or portable medical laser or x-ray equipment used by health service personnel in support of CNIC operations. Unless otherwise specified in this instruction, radiation includes both ionizing and non-ionizing radiation.

a. Ionizing Radiation Inventory. Per reference (c), obtain technical guidance related to ionizing radiation inventory from the Command designated Radiation Safety Officer (RSO), if assigned, or the Naval Sea Systems Command Detachment Radiological Affairs Support Office (NAVSEADET RASO) technical resource listed in enclosure (3).

b. Non-Ionizing Radiation Inventory. Per reference (e), obtain technical guidance related to laser inventory from the Command designated Laser Safety Officer/Specialists, if assigned, or Bureau of Medicine and Surgery (BUMED) Administrative Lead Agent (ALA) technical resource listed in enclosure (3). Where applicable, a secondary technical resource for laser inventory guidance is available from Naval Surface

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Warfare Center Dahlgren Division (NSWCDD). Per reference (f), obtain technical guidance related to Radiofrequency (RF) radiation from the Space and Naval Warfare Systems Command (SPAWAR) technical resource listed in enclosure (3).

6. Responsibilities

a. General. It is the responsibility of the Chain of Command at all levels to support physical inventory requirements and maintain inventory records of non-exempt radiation sources pursuant to this Instruction.

b. CNIC Headquarters Safety (N35) has overall responsibility for Inventory Control Program and ensuring compliance with tracking and monitoring requirements.

c. Region Commander shall:

(1) Ensure required inventories specified in sub-paragraph 4(a) of this Instruction are conducted and reconciled by subordinate commands in accordance references (a) through (g).

(2) Provide roll-up of required inventories from subordinate commands to CNIC Headquarters Safety (N35) no later than 31 Mar of each calendar year.

d. Commanding Officer of an installation shall:

(1) Conduct and reconcile required inventories specified in sub-paragraph 4(a) of this Instruction at least semi-annually or according to requirements specified in references (a) through (g).

(2) Affirm physical inventory of non-exempt radiation sources and provide inventory to the Region Commander no later than 1 Mar of each calendar year. Affirmations shall include updated and reconciled inventory information when physical custody changes or discrepancies occur (e.g., losses, additions, damage, disposal, source location).

(3) Provide storage and use locations of non-exempt commodities, radioactive materials and equipment containing such materials to respective facility custodian and designated fire and emergency response authorities.

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7. Action. Region and Commanding Officers shall implement this instruction.

8. Effective Date. This instruction is effective immediately.



M. C. Vitale
Vice Admiral, U.S. Navy

Distribution:

Electronic only, via CNIC Gateway

<https://cnicgateway.cnic.navy.mil/HQ/N00/CAPM/DIRPR/Directives/Forms/AllItems.aspx>

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GLOSSARY OF TERMS

Generally-Licensed Item. Under reference (g), NRC established general licenses for products or devices containing small amounts of radioactive material normally identified in the manufacturer's instructions or on a caution label attached to the product or device. General licensed products and devices do not normally require a Navy Radioactive Materials Permit (NRMP) and are not covered under the Navy's Master Materials License. These may be purchased by the general public without authorization by NRC and generally present a greater environmental hazard from improper disposal than a health risk to personnel and public.

Inventory or Physical Inventory Record. A record that typically comprises the equipment model type, equipment serial number, drift tube/detector/source serial number, radioisotope, chemical and physical form, activity, date of activity, location (building and street address) and custodian.

Master Materials Licensed Item. Specific license issued per reference (c) to the Department of the Navy by NRC to control the receipt, acquisition, possession, use and transfer of NRC-licensed radioactive material.

Naval Radioactive Material Permit (NRMP). Authorization issued by the Naval Radiation Safety Committee in lieu of a specific license issued by the Nuclear Regulatory Commission (NRC).


Radiation Producing Machine. Any device or equipment capable of generating ionizing radiation as a result of their normal operation, but excluding devices which produce radiation only by the use of radioactive materials.

Radioactive Commodity. An item of Government property composed, in whole or part, of radioactive material; or any non-exempt item that contains radioactivity equal to or in excess of limits established in 10 CFR 20, Appendix (C); or item containing a specific activity greater than 0.002 microcuries per gram of radioactive material and is license/NRMP exempt to the end user.

Radioactive Material. Any material or combination of materials that spontaneously emits ionizing radiation.

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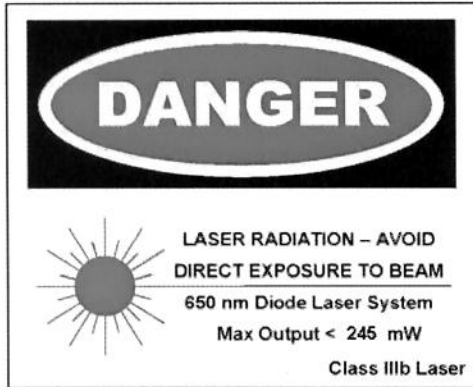
**INFORMATION AND SELECTED EXAMPLES OF COMPONENTS, DEVICES,
EQUIPMENT AND COMMODITIES FOR INVENTORY**

Ionizing Radiation	
Examples of Identifying Labeling and Signage	Examples of Ionizing Radiation Sources Requiring Inventory
 <p>Three-bladed radiation symbol on labels and signage.</p>	<ul style="list-style-type: none"> • Antimony-51 • Carbon-6 • Cesium-55 • Cobalt-27 • Cobalt-60 • Nickel-28 • Tellurium-52 • Thallium-81 • Yttrium-39 • Hydrogen-3 • Chemical detectors • Radiation detectors • X-ray, gamma, neutron machines • Electron microscopes • Electron beam welders • Electron accelerators • Klystron and cathode ray tubes • Irradiators • Ice detectors • Calibration sources • Collimators • Moisture, density, fill level, gauges • Luminous material such as paint • Luminous devices such as tritium exit signs • Luminous devices in air, marine, and land vehicles • Ballasts/counterweights in aircraft, rocket, projectile, missile gyroscopes, flight control surfaces/assemblies • Aircraft engine parts

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Non-Ionizing Radiation

Examples of Identifying Labeling and Signage



Laser Hazard Labeling and Signage.



Radiofrequency (RF) Hazard Signage



Radiofrequency (RF) labeling and Signage

Examples of Non-Ionizing Radiation Sources requiring Inventory

- Military Exempt Lasers
- Range lasers
- Lasers used in research and industry.
- Mobile and fixed radio transmitters
- Microwave transmitters
- Mobile and fixed radar systems.

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TECHNICAL RESOURCES

NAVSEADET RASO

Officer-in-Charge, Naval Sea Systems Command Detachment
Radiological Affairs Support Office
NWS P.O. Drawer 260
Yorktown, VA 23691-0260
Telephone Number: DSN 953-4692
Commercial Number: (757) 887-4692

SPAWAR

SPAWARSYSCEN Atlantic (Code 5.6.1.7)
Head, Electromagnetic Environmental Effects (E3) Branch
PO Box 190022
North Charleston, SC 29419-9022
Telephone Number: DSN 588-5723
Commercial Number: (843) 218-5723

Chief, Bureau of Medicine and Surgery (BUMED)
Administrative Lead Agent for Navy and Marine Corps Laser Safety
(BUMED M3F72)
2300 E. Street, NW
Washington, DC 20372-5300
Telephone Number: DSN 762-3448
Commercial Number: (202) 762-3448

Naval Surface Warfare Center Dahlgren Division (NSWCDD)
Lead Navy Laboratory for Laser Safety
6078 Norc Avenue, Suite 309
Dahlgren, VA 22448-5131
Commercial Number: (540) 653-2442